

### **REMARKS**

In view of the above amendments and the following remarks, reconsideration of the rejections contained in the Office Action of November 20, 2006 is respectfully requested.

As an initial matter, the substitute specification filed October 6, 2006 has now been amended as indicated above to provide literal antecedent basis for new claim language. Specifically, the specification has been amended so as to include the alternate common name of the compounds set forth in the original specification. However, no new matter has been added. Therefore, the Examiner is respectfully requested to enter the amendments to the specification as indicated above.

In item 6 on page 3 of the Office Action, the Examiner rejected dependent claims 31 and 31 under 35 USC § 112, second paragraph, as being indefinite. In particular, the Examiner asserted that the compounds recited in these claims were confusing as worded. In this regard, the Examiner is requested to note that the subject matter of previously-pending dependent claim 31 has now been incorporated into independent claim 1. Furthermore, the original language of dependent claim 31 has been modified so as to recite the alternate common name of the compounds previously recited in claim 31, and claim 32 has been amended in a similar manner. Furthermore, as explained above, corresponding changes have also been made to the specification. As the meaning and scope of the new language recited in the amended claims is entirely clear, it is respectfully submitted that the Examiner's formal rejections under section 112 have been overcome.

The Examiner has rejected independent claim 1 and dependent claims 6-9, 11-13, 17, 19, and 31-34 as being unpatentable over the Ferrier reference (USP 5,843,517) in view of the Chen reference (USP 6,699,380); has rejected claim 10 as being unpatentable over the Ferrier reference in view of the Chen reference, and further in view of the Stevens reference (USP 6,824,612); has rejected claims 14-16 as being unpatentable over the Ferrier reference in view of the Chen reference, and further in view of the Yoshio reference (USP 6,555,158); and has rejected claim 18 as being unpatentable over the Ferrier reference in view of the Chen reference, and further in view of the Arcilesi reference (USP 4,814,205). However, as noted above, independent claim 1

has been amended so as to incorporate the subject matter of previously-pending dependent claim 31. Therefore, for the reasons discussed below, it is respectfully submitted that amended independent claim 1 and the claims that depend therefrom are clearly patentable over the prior art of record.

Independent claim 1 has now been amended to recite that the substrate processing method comprises bringing a pretreatment liquid into contact with a surface of a substrate, and the pretreatment liquid is an aqueous liquid free of any oxidizing agent. The aqueous liquid is formed of a mixture including at least one of a group consisting of palladium hydrochloride, palladium sulfate, and palladium acetate, and at least one of a group consisting of hydrochloric acid, sulfuric acid, fluoric acid, acetic acid, oxalic acid, formic acid, citric acid, and tartaric acid (see page 24, line 24 through page 25, line 12 of the original specification). As a result of the composition of the pretreatment liquid as recited in amended independent claim 1, a metal oxide film can be removed from the surface of a metal region of the substrate without removing the metal itself in the metal region because the aqueous liquid is free of any oxidizing agent and, therefore, the exposed surface of the metal region is not oxidized by an oxidizing agent. Consequently, the reliability of the device can be improved without degrading the electrical performance of the device interconnects.

The Ferrier reference discloses a composition and a method for selectively plating a circuit board. The Examiner asserted that the Ferrier reference teaches performing a preplating treatment on the surface of a substrate, in which a pretreatment liquid is brought into contact with the surface of the substrate. However, the Ferrier reference clearly teaches that the pretreatment liquid is formed of a composition that comprises precious metal ions and an *oxidizing agent* in an acidic aqueous solution (see column 3, lines 20-21 and 50-65 of the Ferrier reference). Thus, the Ferrier reference clearly does not disclose or suggest a pretreatment liquid which is an aqueous solution free of any oxidizing agent. In fact, the Ferrier reference clearly *teaches away* from such an aqueous liquid by clearly explaining that the composition includes an oxidizing agent.

The Chen reference, the Stevens reference, the Yoshio reference, and the Arcilesi reference also do not, either alone or in combination, disclose or suggest a pretreatment liquid

which is an aqueous liquid free of any oxidizing agent, and which is formed of a mixture including at least one of a group consisting of palladium hydrochloride, palladium sulfate, and palladium acetate, and at least one of a group consisting of hydrochloric acid, sulfuric acid, fluoric acid, acetic acid, oxalic acid, formic acid, citric acid, and tartaric acid. Therefore, one of ordinary skill in the art would not be motivated by any of these references to modify the Ferrier reference so as to obtain the invention recited in amended independent claim 1. Accordingly, it is respectfully submitted that amended independent claim 1 and the claims that depend therefrom are clearly patentable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. However, if the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact the Applicant's undersigned representative.

Respectfully submitted,

Xinming WANG et al.

By: 

W. Douglas Hahm  
Registration No. 44,142  
Attorney for Applicants

WDH/akl  
Washington, D.C. 20006-1021  
Telephone (202) 721-8200  
Facsimile (202) 721-8250  
March 20, 2007